FIELD OVERSIGHT SUMMARY REPORT
ACS NPL SITE
GRIFFITH, INDIANA

March 27, 2000

BLACK & VEATCH
SPECIAL PROJECTS CORP.

101 North Wacker Drive, Suite 1100, Chicago, Illinois 60606, (312) 346-3775, Fax: (312) 346-4781

U.S.EPA
American Chemical Service Inc.

BVSPC Project 46518
BVSPC File C.3
July 31, 2000

Mr. Kevin Adler
Remedial Project Manager
U.S. Environmental Protection Agency
Region V, SR-J6
77 West Jackson Boulevard
Chicago, IL 60604-3590

Subject: Field Summary Report

Dear Mr. Adler:

Enclosed is a copy of the quarterly groundwater sampling and Oxygen Reducing Compound (ORC) Study field oversight summary reports for your review. Quarterly sampling took place during the week of March 27, 2000 and June 27, 2000, at the American Chemical Services Superfund site in Griffith, Indiana. ORC sampling occurred on January 13, February 22, March 15, April 25, and June 5, 2000. Please call me at 312/683-7857 if you have any questions.

Sincerely,

BLACK & VEATCH SPECIAL PROJECTS CORP.

Chad Gailey
Project Geologist

ctg
Enclosures

cc: S. Mrkvicka, BVSPC w/enclosures

t:\projects/acs-rac/letters/let32

USEPA/ARCS V
BVSPC Oversight Summary

Reporting Period March 27 to 31, 2000 Hours Worked: 65
Site Name/Location: ACS/Griffith, IN BVSPC Project No.: 46518.238
USEPA Work Assignment Manager: Kevin Adler, RPM Site Manager: Steve Mrkvicka

Personnel Summary Affiliation	No. of Personnel	Responsibility
Lee Orsorz, Montgomery Watson, Addison, IL	1	Respondent's General Contractor
Jennifer Smith, Chad Smith, Rudy Stein, Lonny Boring, and Pete Dorley Montgomery Watson, Addison, IL	5	Field Sampling Crew (for quarterly groundwater sampling)
Jay Basso, Black & Veatch Special Projects Corp, (BVSPC)	1	USEPA Oversight Contractor

Summary of field activities:

During the week of March 27, 2000, Montgomery Watson conducted quarterly groundwater sampling at the American Chemical Services (ACS) Site. Two Montgomery Watson field sampling crews collected samples from monitoring wells within the ACS site boundary, the wetland area, the City of Griffith Landfill, and the areas that lie north, south, and east of the ACS facility. BVSPC's one-man crew conducted oversight of the field activities to ensure that proper sampling techniques were conducted. The specified operating procedure (SOP) for low flow groundwater sampling was adhered to by the sampling team. The BVSPC representative was tasked to collect split samples if the sampling technique differed from the SOP. BVSPC oversaw Montgomery Watson's sample paperwork procedures and decontamination set-up and routine.

Montgomery Watson collected 44 groundwater samples, and duplicate samples, matrix spike/matrix spike duplicate (MS/MSD) samples, and field equipment rinsate blanks. The monitoring wells sampled by Montgomery Watson are listed in the field logbook notes, which are attached to this report. Montgomery Watson used the low flow sampling technique and monitored for stability of the following groundwater parameters: pH, specific conductance, and temperature. Groundwater turbidity was also monitored and

samples were collected when three consecutive parameter readings were within 10 percent of the previous readings or less than 10 nephelometric units (NTU's). The BVSPC representative collected a split sample from MW-48 because the oversight of the March 15 ORC sampling round noted that the integrity of the well had been compromised.

Five equipment rinsate blanks were collected by Montgomery Watson to ensure that proper decontamination procedures yielded clean sampling equipment.

BVSPC noted problems with the tubing used to sample the groundwater. Numerous kinks were created installing and extracting the pump during sampling that hindered groundwater flow. Proper low flow sampling procedures were not available upon arriving on site by Montgomery Watson, nor were the proper well logs as needed for reference.

On January 13, February 22, and March 15, 2000 Montgomery Watson conducted Oxygen Releasing Compound (ORC) sampling for natural attenuation in the area north of the ACS site. Montgomery Watson's field crew consisted of Rudy Stein on January 13, Chad Smith on February 22, and Rudy Stein on the March 15 sampling events. BVSPC provided oversight to ensure proper field procedures were followed. During the March 15 event, the BVSPC representatives noted that MW-48 had been compromised. The well padlock and protective cap were both missing from the well. As a result of this, BVSPC collected a groundwater split sample from MW-48 during the quarterly sampling event. The work plan presented by Montgomery Watson was adhered to by all field crew members. The piezometers sampled by Montgomery Watson are listed in the field logbook notes, which are attached to this report.

Signature: Jay Basso Date: July 26, 2000


REGENESIS

Site: American Chemical Services, Inc.
Project: 46518
Photo: 1
Date: 3-27-00 Time: 15:15
Photographer: Jay Basso
Description: Photo facing west of Lonny Boring performing equipment decontamination at Treatment Building.

Site: American Chemical Services, Inc.
Project: 46518
Photo: 2
Date: 3-27-00 Time: 17:00
Photographer: Jay Basso
Description: Photo of Chad Smith recording water quality parameters.

Site: American Chemical Services, Inc.
Project: 46518
Photo: 3
Date: 3-27-00 Time: 17:20
Photographer: Jay Basso
Description: Photo of Chad Smith collecting groundwater sample at MW38.

Site: American Chemical Services, Inc.
Project: 46518
Photo: 4
Date: 3-28-00 Time: 07:00
Photographer: Jay Basso
Description: Photo of Rudy Stein recording environmental parameters facing east at MW50.

Site: American Chemical Services, Inc.
Project: 46518
Photo: 5
Date: 3-28-00 Time: 07:39
Photographer: Jay Basso
Description: Photo facing southwest of Rudy Stein collecting groundwater sample at MW50.

Site: American Chemical Services, Inc.
Project: 46518
Photo: 6
Date: 3-28-00 Time: 08:40
Photographer: Jay Basso
Description: Photo facing southeast of Rudy Stein collecting groundwater sample at MW47.

Site: American Chemical Services, Inc.
Project: 46518
Photo: 7
Date: 3-28-00 Time: 08:50
Photographer: Jay Basso
Description: Photo of Lonny Boring deconning pump near MW47.

Site: American Chemical Services, Inc.
Project: 46518
Photo: 8
Date: 3-28-00 Time: 10:10
Photographer: Jay Basso
Description: Photo of Peter Dorley recording water quality parameters at MW41.

Site: American Chemical Services, Inc.
Project: 46518
Photo: 9
Date: 3-28-00 Time: 10:40
Photographer: Jay Basso
Description: Photo of Peter Dorley collecting groundwater sample at MW41.


Brush 'N Dust

Site: American Chemical Services, Inc.
Project: 46518
Photo: 10
Date: 3-28-00 Time: 11:15
Photographer: Jay Basso
Description: Photo of Peter Dorley recording water quality parameters at MW45.

Site: American Chemical Services, Inc.
Project: 46518
Photo: 11
Date: 3-28-00 Time: 11:35
Photographer: Jay Basso
Description: Photo of Peter Dorley collecting groundwater sample at MW45.

Site: American Chemical Services, Inc.
Project: 46518
Photo: 12
Date: 3-28-00 Time: 12:15
Photographer: Jay Basso
Description: Photo of Rudy Stein recording water quality parameters at MW06.

Site: American Chemical Services, Inc.
Project: 46518
Photo: 13
Date: 3-28-00 Time: 12:25
Photographer: Jay Basso
Description: Photo of Rudy Stein collecting groundwater sample from MW06 facing east.

Site: American Chemical Services, Inc.
Project: 46518
Photo: 14
Date: 3-28-00 Time: 15:05
Photographer: Jay Basso
Description: Photo of Rudy Stein collecting groundwater sample from MW12 facing west.

Site: American Chemical Services, Inc.
Project: 46518
Photo: 15
Date: 3-28-00 Time: 16:20
Photographer: Jay Basso
Description: Photo of Peter Dorley recording water quality parameters at MW40.

Site: American Chemical Services, Inc.
Project: 46518
Photo: 16
Date: 3-28-00 Time: 16:30
Photographer: Jay Basso
Description: Photo of Peter Dorley collecting groundwater sample for indicator parameters from MW40 facing west.

Site: American Chemical Services, Inc.
Project: 46518
Photo: 17
Date: 3-29-00 Time: 07:15
Photographer: Jay Basso
Description: Photo facing south at MW7 of Rudy Stein recording water quality parameters.

Site: American Chemical Services, Inc.
Project: 46518
Photo: 18
Date: 3-29-00 Time: 07:28
Photographer: Jay Basso
Description: Photo facing south of Rudy Stein collecting groundwater sample from MW7.

Site: American Chemical Services, Inc.
Project: 46518
Photo: 19
Date: 3-29-00 Time: 09:00
Photographer: Jay Basso
Description: Photo facing north of Rudy Stein recording water quality at MW4D.

Site: American Chemical Services, Inc.
Project: 46518
Photo: 20
Date: 3-29-00 Time: 09:20
Photographer: Jay Basso
Description: Photo of Rudy Stein collecting groundwater sample from MW4D.


ENESIS

Site: American Chemical Services, Inc.
Project: 46518
Photo: 21
Date: 3-29-00 Time: 10:30
Photographer: Jay Basso
Description: Photo of Peter Dorley recording water quality parameters at MW24.


REGENESIS

Site: American Chemical Services, Inc.
Project: 46518
Photo: 22
Date: 3-29-00 Time: 10:50
Photographer: Jay Basso
Description: Photo of Peter Dorley collecting groundwater sample from MW24.

Site: American Chemical Services, Inc.
Project: 46518
Photo: 23
Date: 3-29-00 Time: 11:35
Photographer: Jay Basso
Description: Photo of Peter Dorley recording water quality parameters at MW13.

Site: American Chemical Services, Inc.
Project: 46518
Photo: 24
Date: 3-29-00 Time: 11:50
Photographer: Jay Basso
Description: Photo facing east of Peter Dorley collecting groundwater sample from MW13.

Site: American Chemical Services, Inc.
Project: 46518
Photo: 25
Date: 3-29-00 Time: 14:10
Photographer: Jay Basso
Description: Photo facing north of Rudy Stein recording water quality parameters at MW33.

Site: American Chemical Services, Inc.
Project: 46518
Photo: 26
Date: 3-29-00 Time: 15:05
Photographer: Jay Basso
Description: Photo of Rudy Stein collecting groundwater sample from MW33.

Site: American Chemical Services, Inc.
Project: 46518
Photo: 27
Date: 3-29-00 Time: 07:15
Photographer: Jay Basso
Description: Photo facing east of Rudy Stein recording water quality parameters at MW30.

Site: American Chemical Services, Inc.
Project: 46518
Photo: 28
Date: 3-29-00 Time: 15:35
Photographer: Jay Basso
Description: Photo facing north of Rudy Stein collecting groundwater sample from MW30.

Site: American Chemical Services, Inc.
Project: 46518
Photo: 29
Date: 3-30-00 Time: 07:20
Photographer: Jay Basso
Description: Photo facing east of Lonny Boring recording water quality parameters at MW51.


ORC

Site: American Chemical Services, Inc.
Project: 46518
Photo: 30
Date: 3-30-00 Time: 07:35
Photographer: Jay Basso
Description: Photo facing west of Lonny Boring collecting groundwater sample from MW51.

Site: American Chemical Services, Inc.
Project: 46518
Photo: 31
Date: 3-30-00 Time: 08:30
Photographer: Jay Basso
Description: Photo facing south of Lonny Boring recording water quality parameters at MW10C facing south

Site: American Chemical Services, Inc.
Project: 46518
Photo: 32
Date: 3-30-00 Time: 09:10
Photographer: Jay Basso
Description: Photo facing west of Peter Dorley recording environmental parameters at MW29.

REGENESIS

south.

Site: American Chemical Services, Inc.
Project: 46518
Photo: 33
Date: 3-30-00 Time: 09:30
Photographer: Jay Basso
Description: Photo facing west of Peter Dorley collecting groundwater sample from MW29.

Site: American Chemical Services, Inc.
Project: 46518
Photo: 34
Date: 3-30-00 Time: 10:00
Photographer: Jay Basso
Description: Photo facing north of Peter Dorley deconning Grundfos pump following sample of MW29 facing north.

Site: American Chemical Services, Inc.
Project: 46518
Photo: 35
Date: 3-30-00 Time: 14:10
Photographer: Jay Basso
Description: Photo facing west of Peter Dorley recording water quality parameters at MW9R.

(10) J.B. 03/15/00

9:05 Setup @ PZ-7. Begin purging w/ peristaltic pump. Take parameters using Horiba U22.

Environmental parameters taken until they stabilize w/in 10% of each other in three consecutive readings.

9:35 Picture 2 facing NW @ PZ7 of Rudy Stein filling 40mL VOA for ORC bio parameters

Secured PZ7.

9:45 While conducting water level measurements, we noted that the padlock and cap were not present at MW48. We will ~~disc~~ discuss this with Steve Mrkvicka.

9:50 R. Stein deconning pump

10:00 Setup @ PZ8. Begin purging w/ peristaltic pump. Take environmental parameters using Horiba U22.

(11) J.B. 03/15/00

1010 Picture 3 facing East @ PZ8 of Rudy Stein taking environmental parameters.

1015 Picture 4 facing NE @ PZ8 of R. Stein filling 40mL VOA for ORC bio parameters.
Secured PZ8.

1020 R. Stein deconning pump folbwing PZ8 sampling.
Picture 5 facing W of R. Stein deconning pump.

1025 Setup @ PZ6. Begin purging w/ peristaltic pump. Take environmental parameters using Horiba U22.

1050 Picture 6 facing N @ PZ6 of R. Stein filling 40mL VOA for ORC bio parameters.

1100 R. Stein deconning pump folbwing PZ6 sampling.

1105 Setup @ PZ5. Begin purging w/ peristaltic pump. Take environmental parameters using Horiba U22.

(12)

03/15/00

1110 Picture 7 facing SW @ PZ5 of R. Stein taking environmental parameters.

1125 Picture 8 facing SE @ PZ5 of R. Stein filling 40mL VOA for ORC bio parameters.

1250 Picture 9 facing E @ PZ3 of R. Stein taking water level measurement.

1315 Setup @ PZ1. Begin purging w/ peristaltic pump. Take environmental parameters using Horiba U22.

1325 Picture 10 facing NE @ PZ1 of R. Stein taking environmental parameters.

1331 Picture 11 facing N @ PZ1 of R. Stein filling 40mL VOA for ORC bio parameters.

~~1340~~ Secured PZ1.

1340 R. Stein deconning pump.

1345 Setup @ PZ3. Begin purging w/ peristaltic pump. Take environmental parameters using Horiba U22.

(13)

03/15/00

13:50 Picture 12 facing E @ PZ3 of R. Stein taking environmental parameters.

1406 Picture 13 facing E @ PZ3 of R. Stein filling 40mL VOA for ORC bio parameters.

14:11 RUDY STEIN DECONNING PUMP TO MOB TO ORC PZ4.

14:20 Setup @ PZ4. Begin purging w/ peristaltic pump. Take environmental parameters using Horiba U22.

1425 Picture 14 facing NE @ PZ4 of R. Stein taking environmental parameters.

1445 Picture 15 facing N @ PZ4 of R. Stein filling 40mL VOA for ORC bio parameters.

Secured PZ4.

1450 R. Stein deconning pump.

1455 Setup @ PZ2. Begin purging w/ peristaltic pump. Take environmental parameters using Horiba U22.

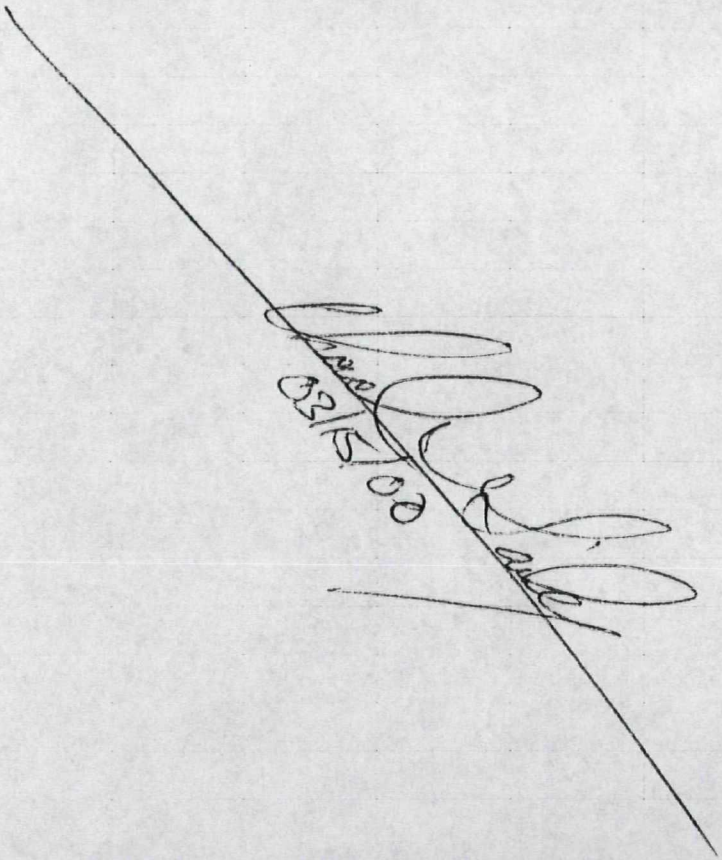
03/15/00

1500 Picture 16 facing E @ PZ2 of R. Stein taking environmental parameters.

1515 Picture 17 facing NE @ PZ2 of R. Stein filling 40mL VOA for environmental parameters. Secure PZ2.

1520 ~~Pic 18~~ R. Stein deconning pump.

1530 Collecting Field Blank.



MARCH 27, 2000

11:45 Arrived on-Site. weather partly cloudy low 50's

The folbwing personnel are present:

Jennifer Smith	MWA
Lanny Boring	MWA
Peter Dorley	MWA
Rudy Stein	MWA
Chad Smith	MWA
Sean Grady	IDEM

11:50 Spoke w/ Chad Smith of MWA. Today MWA is collecting groundwater levels. There may be sampling conducted near the end of the day.

13:30 R. Stein beginning to decon ~~EP~~ equipment.

14:45 MWA off-Site for lunch. J. Basso off-Site to get supplies.

15:15 J. Basso back on-Site.

Photo 1 of MWA deconning pumps.

Photo 2 of MWA deconning pumps.

16:15 MWA going to wells to commence sampling.

16:40 C. Smith + P. Dorley set up at MW38.

(16) 3/27/2000

16:50 Begin purging MW38 w/ Grundfos pump. Environmental parameters are collected with a Horiba U22 flow through cell.

17:00 Photo 3 of C. Smith collecting environmental parameters.

17:15

pH	cond mS/cm	turb	DO	temp	ORP
6.23	0.452	26	0.71	8.8	0

FINAL PARAMETERS.

17:20 Begin sampling MW38. Photo 4 of C. Smith collecting sample.

Bottles
- 3 - VOAs (40mL w/ HCl)
- 2 - 1L ambers (unpreserved) for SVOCs
- 2 - 1L ambers (unpreserved) for Pest/PCB
- 1 - 1L poly (w/ HNO_3) for metals
- 1 - 1L poly (w/ NaOH) for cyanide.

17:30 Secure well MW38. Packup equipment to go to decon.

17:40 P. Dorley and C. Smith decanning equipment

18:00 Setup @ MW39 to collect samples. Begin purging

(17) 3/27/2000

18:15 Photo 5 of P. Dorley collecting environmental parameters from MW39.

1835 Begin Sampling MW39.

Final Parameters:

pH	cond	turb	DO	Temp	ORP
6.93	1.40	26.8	1.14	8.5	-71

Photo 6 of P. Dorley collecting sample from MW39.
- 3 40mL VOAs for VOCs (w/ HCl)
- 2 1L ambers for SVOCs
- 2 1L ambers for Pest./PCBs
- 1 1L poly for metals (w/ HNO_3)
- 1 1L poly for cyanide (w/ NaOH)

18:45 Secure MW39

19:00 J Basso off-Site

3/27/00

(18) JB 3/28/2000

615 J. Brasso on-Site MWA present. stocking van and truck to prepare for sampling.

Weather: Cool, 45° high today currently clear skies 35° snow/showers possible later today

640 Setup @ MW50 to collect samples

650 Begin purging MW50 with Grundfos pump. Environmental parameters will be collected using Horiba U22.

700 Photo 7 of R. Stein recording environmental parameters facing E at MW50

726 Commence sampling of MW50.

Final Parameters

pH	cond	turb	DO	temp	ORP
7.39	0.21	990	4.68	11.7	-143

All parameters have stabilized however turb remains high. MWA will sample.

Photo 8 facing SW of R. Stein collecting GW sample at MW 50.

JB

JB 3/28/00 (19)

730 Bottles:

3	VOA 40mL	(VOCs) w/HCl
2	1L ambers	(SVOCs) unpreserved
2	1L ambers	(Pest/PCB) unpreserved.
1	1L poly	(metals) w/ HNO_3
1	1L poly	(cyanide) w/ NaOH

740 Secure MW50.

~~JB~~ 750 Decomming equipment

805 Setup @ MW47 to collect groundwater sample. Begin purging MW47 with Grundfos pump.

840 Collecting GW sample at MW47. Photo 9 of R Stein collecting GW sample at MW47 (facing SE).

Final parameters

pH	cond	turb	DO	Temp	ORP
5.56	15	56	8.89	9.9	218

Bottles

3	VOA 40mL	(VOCs) w/HCl
1	1L ambers	(SVOCs) unpreserved
2	1L ambers	(Pest/PCBs) unpreserved
1	1L poly	(metals) w/ HNO_3
1	1L poly	(cyanide) w/ NaOH

850 Secure MW47. JB

Photo 10 of L. Boring decomming pump near MW47

JB

(20) 3/28/00

Cap of MW47 was broken (hinge rusted out).

1000 Setup @ MW41 to collect GW sample

1010 Photo 11 of P. Dorley recording environmental parameters at MW41.

1040 Collecting GW Sample from MW41 Photo 12 of P. Dorley collecting GW sample.

Bottles are same as previous wells.

1100 MWA deconning pump near MW45. Cover on MW45 is broken at the hinge.

1110 C. Smith and P. Dorley setup at MW45. Begin purging.

1115 Photo 13 of P. Dorley recording environmental parameters at MW45.

1135 Collect GW Sample from MW45.

Final Parameters:

pH	cond	turb	DO	temp	ORP
7.15	1.20	147.0	1.21	7.8	-117

Photo 14 of P. Dorley collecting GW sample at MW45.

3/28/2000 (21)

1148 Setup @ MW06 to begin purging and sample.

1215 Photo 15 of R Stein recording environmental parameters.

1225 Commence sampling of MW06. Photo 16 of R. Stein collecting GW Sample from MW06 facing E.

Final Parameters

pH	cond	turb	D.O.	temp	ORP
6.69	0.18	9	2.82	14.2	-97

1235 Sampling complete. MWA securing MW06.

1245 C. Stein and L. Boring deconning pump.

1300 off-Site for lunch

1420 R. Stein + L. Boring setting up at MW12

~~1515~~ Purging MW12.

1505 Collecting GW sample from MW12 Photo 17 of R. Stein collecting GW sample from MW12 facing W.

Final parameters.

pH	cond	turb	DO	temp	ORP
6.84	41	240	8.43	11.0	-65

1520 R. Stein and L. Boring deconning equipment near MW12, and securing well.

(22) 3/28/2000

1605 C. Smith and P. Dorley begin purging MW40.

1620 Photo 18 of P. Dorley recording environmental parameters at MW40.

16:30 Collect GW sample from MW40 for indicator parameters.

pH	cond	turb	DO	Temp	ORP
7.04	0.329	0.8	3.33	8.8	150

Photo 19 of P. Dorley collecting GW sample for indicator parameters from MW40 facing W.

1645 Securing MW40. MWA will stop sampling now to pack coolers and send to lab.

1700 J. Basso off-Site

3/28/2000

3/29/2000 (23)

615 J Basso on-Site. R. Stein, P. Dorley, L. Boring, and C. Smith on-site stocking van and bagging ice.

Weather: Cool 35° partly cloudy high today 45-50°

650 Setup @ MW7 to collect GW samples

700 Begin purging MW7.

715 Photo 20 of R. Stein recording environmental parameters facing S at MW7.

728 Begin collecting GW sample @ MW7. Sapling for indicator parameters.

pH	cond	turb	DO	Temp	ORP
7.50	0.740	61.0	0.9	11.2	-158

Photo 21 of R. Stein collecting GW sample from MW7 facing S.

Bottles:

3 VOA 40mL w/HCL

1 1L poly (indicator metals) w/ HNO_3

A duplicate sample was collected at this well.

900 R. Stein + L. Boring setup @ MW4D purging GW to sample.

Photo 21 of R. Stein recording environmental parameters facing N at MW4D.

(24) 3/29/2000

9:20 MWA preparing to sample MW4D for indicator parameters. A MS/MSD sample will be collected here.

Final parameters:

pH	cond	turb	DO	temp	ORP
7.57	1.47	-3.1	0.89	13.7	-141

Photo 23 of R. Stein collecting GW sample from MW4D. A MS/MSD sample was collected at this well.

9:40 Sampling of MW4D complete. R. Stein & L. Boring are securing pump & well and decanning pump.

1010 C. Smith & P. Dorley set up at MW24 to begin pumping.

1030 Photo 24 of P. Dorley recording environmental parameters at MW24

1050 C. Smith and P. Dorley commence sampling of MW24. GW will be analyzed for the full list of parameters associated w/ the Site.

pH	cond	turb	DO	temp	ORP
7.12	0.12	48	1.09	11.0	-80

Photo 25 of P. Dorley collecting GW sample from MW24.

1100 Sampling complete. MWA securing well

3/29/00 (25)

1120 Setup @ ~~MW33~~ MW13* Purging well prior to sampling.

1135 Photo 26 of P. Dorley recording environmental parameters.

(Environmental parameters collected at MW13)

1150 C. Smith & P. Dorley commence sampling of ~~MW33~~ MW13 DB.

Final Parameters:

pH	~~cond~~	turb	~~ter~~ DB	DO	Temp	ORP
7.08	0.12	15		4.70	8.6	-96

Photo 27 of P. Dorley collecting GW sample from ~~MW33~~ MW13 DB (facing E).

1205 Secure well ~~MW33~~ MW13 DB.

1350 Setup @ MW33 and begin purging.

1405 Photo 28 of R. Stein recording environmental parameters facing N at MW33.

1410 Collect GW sample from MW33.

Final parameters

pH	cond	turb	D.O.	temp	ORP
6.75	2.80	45.3	1.01	11.1	-91

Photo 29 of R. Stein collecting GW sample from MW33.

GW sample ~~cont~~ DB consists of 3-40 mL VOAs, 4 1L ambers, and 2 1L poly

(26) 3/29/00

1430 Securing MW33.

1500 R. Stein + L. Boring purging MW30 prior to collecting GW samples.

1505 Photo 30 of R. Stein recording environmental parameters at MW30 facing E.

1530 Collect GW sample from ~~MW33~~ MW30 for full parameter list.

~~JB~~ Final parameters.

pH	cond	turb	DO	temp	ORP
7.38	1.10	92.9	0.97	11.5	-146

1535 Photo 31 of R. Stein collecting GW sample from ~~MW33~~ MW30 facing N.

1630 J Basso off-Site

3/29/00

3/30/00 ~~3/29/00~~ (27)

615 J Basso on-Site. MWA already present. MWA organizing bottles and bagging ice.

645 R. Stein + L. Boring setup @ MW51.

710 Begin purging MW51.

720 Photo 32 of L. Boring recording environmental parameters facing E at MW51.

735 Commence sampling of MW51.

Final parameters

pH	cond	turb	DO	temp	ORP
6.77	1.54	254	1.71	11.0	-95

Photo 33 of L. Boring collecting GW sample from MW51 facing W.

746 Decanning pump and securing well.

820 Setup @ MW10C. Purging well.

830 Photo 34 of L. Boring collecting environmental parameters facing S at MW10c.

900 Purging MW29.

910 Photo 35 of P. Dorley recording environmental parameters facing W at MW29.

925 Collect GW sample from MW29. Will collect MS/MSD sample from this well.

(28) 3/30/00

Final Parameters

pH	cond	turb	D.O.	temp	ORP
6.99	0.12	110	2.39	11.7	-136

930 Photo 36 of P. Dorley collecting GW sample from MW29 facing W.

9:50 Secure MW29.

10:00 Photo 37 of P. Dorley deconning Grundfos pump following sampling at MW29 facing N.

1015 Purging MW9R prior to sampling.

1030 Photo 38 of P. Dorley recording environmental parameters at MW9R (facing W)

1040 Collect GW sample from MW9R. Will collect duplicate sample at this location also.

Final parameters

pH	cond	turb	DO	temp	ORP
6.75	0.10	0	3.25	12.2	-107

1050 Completed sampling. Removing pump and securing well.

1120 S. Mrkvicka arrives on-Site.

1209 11:30 Collect field blank.

1415 P. Dorley and C. Smith setup @ MW48 and purging wells.

3/30/00 (29)

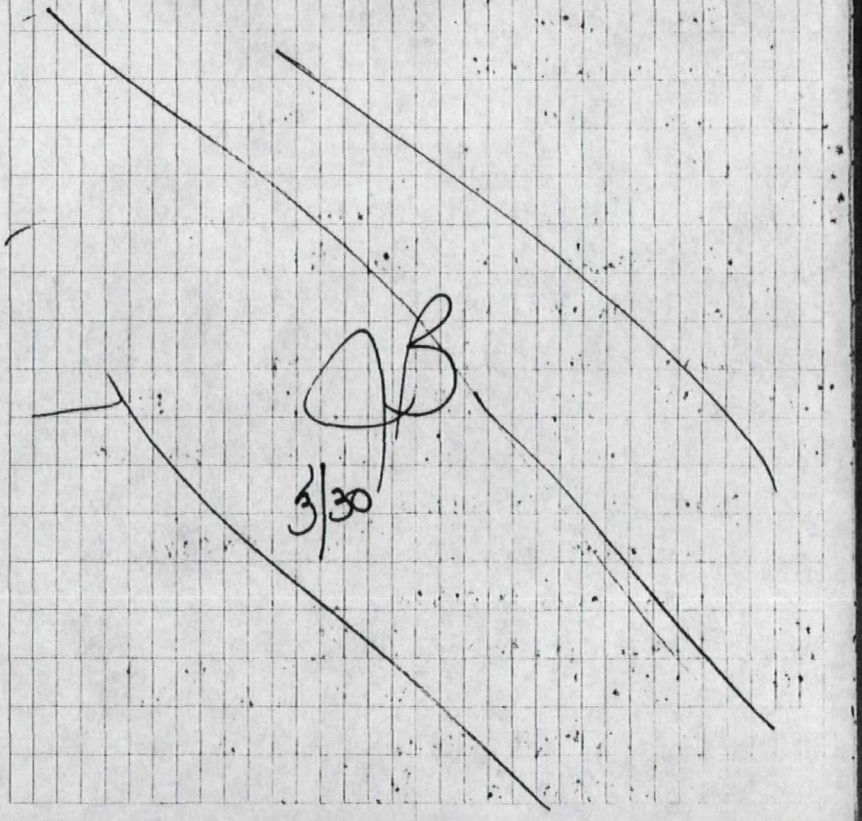
1440 Photo 39 of P. Dorley recording environmental parameters at MW48 facing E.

1450 MWA collects GW sample from MW48. B&V will also collect a split sample.

16:30 Complete sampling at MW48.

16:50 Packing Samples

19:00 J. BASSO off-Site



(30) 3/31/00 JB

6:30 J. Bresso on-Site. R. Stein, C. Smith, L. Boring, and P. Dorley on-Site for sampling

6:50 R. Stein + L. Boring purging MW54R.

C. Smith + P. Dorley purging MW55.

7:45 C. Smith + P. Dorley collect GW sample from MW55.

Final parameters:

pH	cond	turb	DO	temp	ORP
7.12	85	2	1.04	11.4	-110

751 R. Stein + L. Boring collect GW sample from MW54R.

Final Parameters

pH	cond	turb	DO	temp	ORP
7.28	0.988	102	1.35	12.5	-145

800 C. Smith + P. Dorley removing pump and securing well.

830 L. Boring + R. Stein removing pump and securing well.

900 Begin purging MW19.

940 Collect GW sample from MW19 A duplicate sample will be collected at MW19.

JB

JB 3/31/00 (31)

Final parameters for MW19

pH	cond	turb	D.O.	temp	ORP
7.26	0.60	6	0.69	9.3	-176

1000 Sampling complete. P. Dorley and L. Boring are pulling the pump and securing the well.


CRC PVC

Site: American Chemical Services, Inc.
Proj. #: 46517/46518
Roll: 1 Photo #:11
Date: 01-13-00 Time: 09:45
Photographer: Chad Gailey
Description: Photo facing north at ORC PZ7 of Rudy Stein hooking up the Horiba water quality meter and peristaltic pump.

Site: American Chemical Services, Inc.
Proj. #: 46517/46518
Roll: 1 Photo #: 12
Date: 01-13-00 Time: 10:25
Photographer: Chad Gailey
Description: Photo facing north at ORC PZ7 of Rudy Stein filling a VOA for natural attenuation parameters.

Site: American Chemical Services, Inc.
Proj. #: 46517/46518
Roll: 1 Photo #: 13
Date: 01-13-00 Time: 10:30
Photographer: Chad Gailey
Description: Photo facing east at ORC PZ8 of Rudy Stein measuring total depth to water.

Site: American Chemical Services, Inc.
Proj. #: 46517/46518
Roll: 1 Photo #: 14
Date: 01-13-00 Time: 10:40
Photographer: Chad Gailey
Description: Photo facing north at ORC PZ6 of Rudy Stein measuring total depth to water.


MW-22 P25

Site: American Chemical Services, Inc.
Proj. #: 46517/46518
Roll: 1 Photo #:15
Date: 01-13-00 Time: 10:45
Photographer: Chad Gailey
Description: Photo facing southeast at ORC PZ5 of Rudy Stein measuring total depth to water

Site: American Chemical Services, Inc.
Proj. #: 46517/46518
Roll: 1 Photo #:16
Date: 01-13-00 Time: 11:45
Photographer: Chad Gailey
Description: Photo facing east at PZ8 of rudy filling a VOA for ORC sampling.


REGENESIS

Site: American Chemical Services, Inc.
Proj. #: 46517/46518
Roll: 1 Photo #:17
Date: 01-13-00 Time: 12.25
Photographer: Chad Gailey
Description: Photo facing southeast at ORC PZ6 of Rudy Stein filling a VOA for natural attenuation parameters.


ORZP25

Site: American Chemical Services, Inc.
Proj. #: 46517/46518
Roll: 1 Photo #:18
Date: 01-13-00 Time: 13:05
Photographer: Chad Gailey
Description: Photo facing southeast at ORC PZ5 of Rudy Stein filling A VOA for natural attenuation parameters.

Site: American Chemical Services, Inc.
Proj. #: 46517/46518
Roll: 1 Photo #:19
Date: 01-13-00 Time: 13:40
Photographer: Chad Gailey
Description: Photo facing north at ORC PZ4 of Rudy Stein measuring total depth to water.


ORC P2 1

Site: American Chemical Services, Inc.
Proj. #: 46517/46518
Roll: 1 Photo #:20
Date: 01-13-00 Time: 14:15
Photographer: Chad Gailey
Description: Photo facing north at ORC PZ1 of Rudy Stein performing sample management.

Site: American Chemical Services, Inc.
Proj. #: 46517/46518
Roll: 1 Photo #:21
Date: 01-13-00 Time: 14:55
Photographer: Chad Gailey
Description: Photo facing east at ORC PZ3 of Rudy Stein filling VOAs for natural attenuation parameters.

Site: American Chemical Services, Inc.
Proj. #: 46517/46518
Roll: 1 Photo #:22
Date: 01-13-00 Time: 15:35
Photographer: Chad Gailey
Description: Photo facing northeast at ORC PZ2 of Rudy Stein filling a VOA for natural attenuation parameters.

Site: American Chemical Services, Inc.
Project: 46518
Photo: 1
Date: 2-22-00 Time: 09:15
Photographer: Chad Gailey
Description: Photo facing north, at ORC PZ7 of Chad Smith filling a 40mL VOA for natural attenuation parameters.


2
ORC PZ-6

Site: American Chemical Services, Inc.
Project: 46518
Photo: 2
Date: 2-22-00 Time: 09:50
Photographer: Chad Gailey
Description: Photo facing north at ORC PZ6 of Chad Smith recording water quality parameters.


ORC P&G

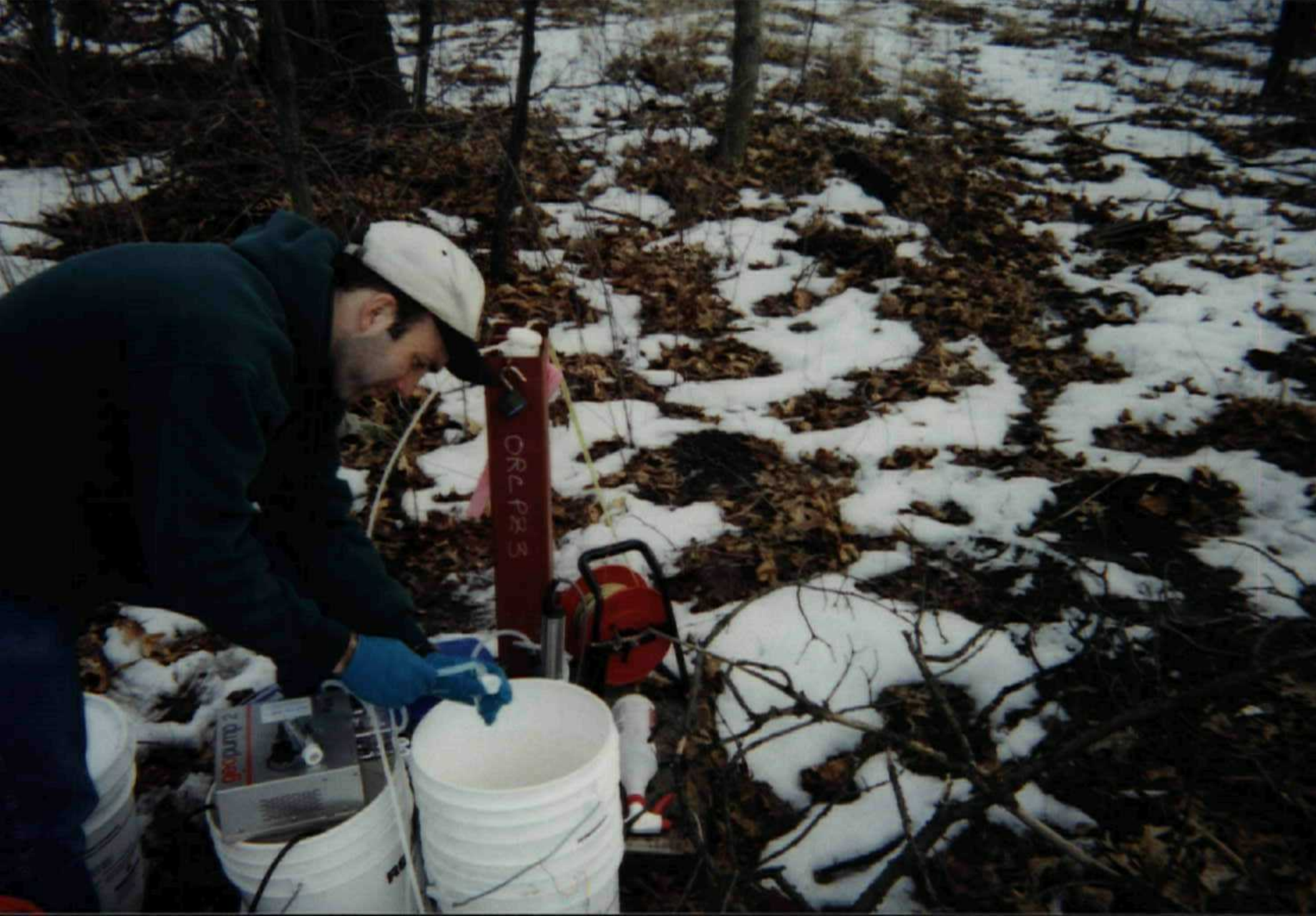
Site: American Chemical Services, Inc.
Project: 46518
Photo: 3
Date: 2-22-00 Time: 10:00
Photographer: Chad Gailey
Description: Photo facing northwest, at ORC PZ6 of Chad Smith filling a 40mL VOA for natural attenuation parameters.

Site: American Chemical Services, Inc.
Project: 46518
Photo: 4
Date: 2-22-00 Time: 10:45
Photographer: Chad Gailey
Description: Photo facing east at ORC PZ8 of Chad Smith filling a 40mL VOA for natural attenuation parameters.

Site: American Chemical Services, Inc.
Project: 46518
Photo: 5
Date: 2-22-00 Time: 11:05
Photographer: Chad Gailey
Description: Photo facing east at ORC PZ5 of Chad Smith filling a 40mL VOA for natural attenuation parameters.


ORC PZ 1

Site: American Chemical Services, Inc.
Project: 46518
Photo: 6
Date: 2-22-00 Time: 13:35
Photographer: Chad Gailey
Description: Photo facing north at ORC PZ1 of Chad Smith filling a 40mL VOA for natural attenuation parameters.


ORC PR3

Site: American Chemical Services, Inc.
Project: 46518
Photo: 7
Date: 2-22-00 Time: 14:42
Photographer: Chad Gailey
Description: Photo facing east at ORC PZ3 of Chad Smith filling a 40mL VOA for natural attenuation parameters.


ORC P&T

Site: American Chemical Services, Inc.
Project: 46518
Photo: 8
Date: 2-22-00 Time: 15:22
Photographer: Chad Gailey
Description: Photo facing north at ORC PZ4 of Chad Smith filling a 40mL VOA for natural attenuation parameters.


ORC PZ2

Site: American Chemical Services, Inc.
Project: 46518
Photo: 9
Date: 2-22-00 Time: 16:11
Photographer: Chad Gailey
Description: Photo facing east at ORC PZ2 of Chad Smith filling a 40mL VOA for natural attenuation parameters.


geopump 2
geotech

Site: American Chemical Services, Inc.
Project: 46518
Photo: 10
Date: 2-22-00 Time: 16:35
Photographer: Chad Gailey
Description: Photo facing north at Wastewater Treatment Building of Chad Smith collecting a field blank.

Site: American Chemical Services, Inc.
Project: 46518
Photo: 1
Date: 3-15-00 Time: 08:50
Photographer: Jay Basso
Description: Photo facing north of Rudy Stein recording groundwater level at ORC PZ7.

Site: American Chemical Services, Inc.
Project: 46518
Photo: 2
Date: 3-15-00 Time: 09:22
Photographer: Jay Basso
Description: Photo facing northwest of Rudy Stein collecting groundwater sample at ORC PZ7.

Site: American Chemical Services, Inc.
Project: 46518
Photo: 3
Date: 3-15-00 Time: 10:10
Photographer: Jay Basso
Description: Photo facing east at ORC PZ8 of Rudy Stein recording water quality parameters.

Site: American Chemical Services, Inc.
Project: 46518
Photo: 4
Date: 3-15-00 Time: 10:15
Photographer: Jay Basso
Description: Photo facing northeast at ORC PZ8 of Rudy Stein filling 40mL VOA for natural attenuation parameters.

Site: American Chemical Services, Inc.
Project: 46518
Photo: 5
Date: 3-15-00 Time: 10:20
Photographer: Jay Basso
Description: Photo facing west of Rudy Stein performing equipment decontamination.

Site: American Chemical Services, Inc.
Project: 46518
Photo: 6
Date: 3-15-00 Time: 10:50
Photographer: Jay Basso
Description: Photo facing north at ORC PZ6 of Rudy Stein filling 40mL VOA for natural attenuation parameters.

Site: American Chemical Services, Inc.
Project: 46518
Photo: 7
Date: 3-15-00 Time: 11:10
Photographer: Jay Basso
Description: Photo facing southwest at ORC PZ5 of Rudy Stein recording water quality parameters.

Site: American Chemical Services, Inc.
Project: 46518
Photo: 8
Date: 3-15-00 Time: 11:25
Photographer: Jay Basso
Description: Photo facing southeast of Rudy Stein collecting groundwater sample at ORC PZ5.

Site: American Chemical Services, Inc.
Project: 46518
Photo: 9
Date: 3-15-00 Time: 12:50
Photographer: Jay Basso
Description: Photo facing east at ORC PZ3 of Rudy Stein recording water level.

Site: American Chemical Services, Inc.
Project: 46518
Photo: 10
Date: 3-15-00 Time: 13:25
Photographer: Jay Basso
Description: Photo facing northeast of Rudy Stein recording water quality parameters at ORC PZ1.


ORC P2

Site: American Chemical Services, Inc.
Project: 46518
Photo: 11
Date: 3-15-00 Time: 13:31
Photographer: Jay Basso
Description: Photo facing north at ORC PZ1 of Rudy Stein collecting groundwater sample.

Site: American Chemical Services, Inc.
Project: 46518
Photo: 12
Date: 3-15-00 Time: 13:50
Photographer: Jay Basso
Description: Photo facing east of Rudy Stein recording water quality parameters at ORC PZ3.


ORC 233
ESI
REGENESIS

Site: American Chemical Services, Inc.
Project: 46518
Photo: 13
Date: 3-15-00 Time: 14:06
Photographer: Jay Basso
Description: Photo facing east at ORC PZ3 of Rudy Stein filling 40mL VOA for natural attenuation parameters.

Site: American Chemical Services, Inc.
Project: 46518
Photo: 14
Date: 3-15-00 Time: 14:25
Photographer: Jay Basso
Description: Photo facing northeast of Rudy Stein recording water quality parameters at ORC PZ4.

Site: American Chemical Services, Inc.
Project: 46518
Photo: 15
Date: 3-15-00 Time: 14:45
Photographer: Jay Basso
Description: Photo facing north at ORC PZ4 of Rudy Stein filling 40mL VOA for natural attenuation parameters.

Site: American Chemical Services, Inc.
Project: 46518
Photo: 16
Date: 3-15-00 Time: 15:00
Photographer: Jay Basso
Description: Photo facing east at ORC PZ2 of Rudy Stein recording water quality parameters.


ORC PZ2

Site: American Chemical Services, Inc.
Project: 46518
Photo: 17
Date: 3-15-00 Time: 15:15
Photographer: Jay Basso
Description: Photo facing northeast at ORC PZ2 of Rudy Stein filling 40mL VOA for natural attenuation parameters.

ORC Field Notes

CONTENTS

PAGE NO.	REFERENCE	DATE

(1) Chad [illegible] 01/13/2000

7:00 ARRIVED ON SITE, Weather Snowy
temp. upper 20s
PRESENT:

8:30 Ricky Stein ARRIVED, He Decoed Equipment
AND Setup For Sampling EVENT
9:30 Mob to wells 5-8
9:40 ARRived @ OBC PZ 7
9:45 Picture #11 Facing North @ OBC PZ 7
of Ricky Stein hooking up Horiba water
Quality meter AND Peristaltic
10:25 Picture 12 Facing N [illegible]
[illegible] Picture 13 Facing E @ PZ 5 of [illegible]
MEASURING WATER Level 8.6
[illegible] Picture 14 [illegible] PZ [illegible]
[illegible] [illegible] [illegible].6.8
10:45 Picture 15 Facing SE @ PZ 5
water Level [illegible] 8.4
10:47 10.7 @ MW48 ON [illegible]
11:03 WENT TO WATER TREATMENT Bld
to Call STEVE MRKVCKA. INFORM him
OF STATE AND EVENTS ON SITE,
Now waiting for the team.

[signature]

(4) Chad Smith 02/22/2000

8:00 ARRIVED ON SITE, Weather Cloudy Temp 38°F (NPR News) Chad Smith is CONDUCTING THE ORC SAMPLING, Presently Calibrating Equipment AND TAKING WATER Levels.

9:00 Purging ORC PZ 7 w/ Peristaltic Pump TAKE ENVIRONMENTAL Parameters w/ HORIBA U-22.

9:15 Picture 1 Facing North @ PZ7 OF CHAD SMITH Filling A 40ml VOA FOR ORC Bio PARAMETERS

9:25 All WATER IS BEING CONTAINERIZED, AND TAKEN BACK TO WATER TREATMENT Bld.

ENVIRONMENTAL PARAMETERS ARE TAKEN until they STABALIZE within 10% OF EACH OTHER IN THREE CONSECUTIVE READINGS

9:25 FINISHED SAMPLING ORC PZ-7, CHAD IS CURRENTLY LABELING THE BOTTLES.

9:33 DECONING Pump, Tubing, AND EQUIPMENT @ ORC PZ 6.

DEPTH TO WATER 6.28, BEGINING MEASUREMENT BEFOR PUMPING.

Chad Smith

(5) Chad Smith 02/22/2000

9:50 PICTURE 2 FACING NORTH @ ORC PZ6 OF CHAD Smith TAKING PARAMETERS FOR Bio PARAMETERS.

10:00 Picture 3 FACING NORTH WEST @ ORC PZ 6 OF CHAD SMITH FILLING A 40ml VOA for Bio PARAMETERS.

10:05 FINISHED Sampling All Purge WATER WAS CONTAINERIZED FOR Disposal AT The WATER-TREATMENT Bld.

Now MOBILIZING TO ORC PZ8

Samples ARE placed ON ICE Directly AFTER Sampling is complete for EACH well.

10:20 DECONING pump @ ORC PZ 8, BEFORE Sampling well.

Depth to Water @ PZ8 8.28

Note Before purging

10:45 Picture #4 FACING EAST @ ORC PZ-8 OF Chad Smith Filling 4 40ml VOA for ORC.

All water (purge) was containerize for Disposal at the water treatment Bld.

Samples were placed on ice + Labeled.

Mobing to PZ 5.

11:00 DECONED pump + Equipment @ PZ-5

Chad Smith

(6) Chad Smith 02/22/2008

11:02 Depth To water @ PZ-5 6.40 Before Pumping

11:05 Purging PZ-5

Picture #5 facing EAST @ ORC PZ-5 of Chad Smith filling a 40ml VOA for ORC, bio parameters.

11:35 Samples PLACED ON ICE with Labels.

All purge water was containerized for Disposal @ WATER TREATMENT Bld.

12:00 Lunch

12:30 Return Lunch Empty purge water, MEASUREING Groundwater Depths in Sycamore WELLS.

13:30 Chad Smith is Decontaminating the pump and equipment.

Mob to ORC PZ1

13:35 STARTED PURGEING ORC PZ1.

DEPTH TO WATER @ PZ1 is 9.86

Picture #6 Facing North @ ORC. PZ1, of CHAD Smith Filling 40ml VOA For Bio PARAMETER.

All WATER WAS CONTAINERIZED FOR Disposal

Samples were ICED Directly.

14:07 mob to ORC PZ3

Chad Smith

(7) Chad Smith 02/22/2008

14:10 Depth to WATER @ ORC PZ3 is 10.68

14:15 - Deconing Pump & Equipment

14:17 Purge well Containerized all purge water

14:35 Collecting ENVIRONMENTAL Parameters.

14:40 Sampling This will be a Duplicate Sample

14:42 Picture #7 Facing East @ ORC PZ3 OF Chad smith Filling a 40ml VOA For Bio PARAMETERS.

15:00 Pump is DECONed AND Chad is STARTING To purge well.

Depth to water @ PZ4 13.83

Total Depth @ PZ4 16.05

15:20 READ TO Sample, Parameter are with IN 10% of Last 3 READING RECORDed in Montgomery WATSON OR Field Book.

15:22 Picture #8 FACING North @ PZ4 OF Chad Smith filling 40ml VOAs for bio parameters. All purge water was CONTAINERIZED AND DISPOSED OF AT WATER TREATMENT Bld

15:30 FINISHED with PZ-4, Mobilizing to PZ2.

15:32 Depth To water @ PZ-2 13.58

16:11 Chad Smith is ready to Sample, Parameter ARE within 10% in three consecutive READING, recorded in MW Log Book.

Chad Smith

(8) Chad Gailey 03/02/2000

Picture #9 Facing East @ PZ2 of Chad Smith Collecting a 40ml VOA for Biological Parameters.

14:35 Picture #10 Facing North @ WTB of Chad Smith Collecting a Field Blank.

16:40 Chad Smith has completed Round Eleven of the Fourteen Rounds of ORC Sampling. Water (Purge) was Properly Disposed of, Sample Procedure were adhereed to and followed. PARAMETERS For Biological parameters are RECORD in MW Log Book For ORC Sampling

17:15 Leave Site: Lock Door & GATE

Chad Gailey 03/02/2000

(9) Chad Gailey 03/15/2000

7:00 ARRIVED ONSITE, WEATHER, TEMP MID 30's LIGHT BREEZE, PARTLY SUNNY. PRESENT JAY BASSO, Chad Gailey

8:00 Rudy Stein from MW ARRIVED FOR ORC Sampling.

8:15 Rudy Stein is prepping FOR Sampling ON NORTH SIDE OF TRUCK. PZ wells 5-8.

8:50 PICTURE 1 facing North @ PZ 7 of Rudy Stein measuring water level

Piezometer	Depth to Water, ft
PZ 8	7.39
PZ 7	5.06
PZ 6	5.38
PZ 5	5.51
*MW48	5.73 (no cap or lock)
PZ 4	12.76
PZ 3	9.55
PZ 2	12.50
PZ 1	8.66
MW54R	16.63
MW49	6.81